

The Future of Healthcare Internet of Things: A Survey of Emerging Technologies

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Abstract

The impact of the Internet of Things (IoT) on the advancement of the healthcare industry is immense. The ushering of the Medicine 4.0 has resulted in an increased effort to develop platforms, both at the hardware level as well as the underlying software level. This vision has led to the development of Healthcare IoT (H-IoT) systems. The basic enabling technologies include the communication systems between the sensing nodes and the processors; and the processing algorithms for generating an output from the data collected by the sensors. However, at present, these enabling technologies are also supported by several new technologies. The use of Artificial Intelligence (AI) has transformed the H-IoT systems at almost every level. The fog/edge paradigm is bringing the computing power close to the deployed network and hence mitigating many challenges in the process. While the big data allows handling an enormous amount of data. Additionally, the Software Defined Networks (SDNs) bring flexibility to the system while the blockchains are finding the most novel use cases in H-IoT systems. The Internet of Nano Things (IoNT) and Tactile Internet (TI) are driving the innovation in the H-IoT applications. This paper delves into the ways these technologies are transforming the H-IoT systems and also identifies the future course for improving the Quality of Service (QoS) using these new technologies.